

Pink

7. The method of Claim 2 wherein the applied voltage has a pulsed waveform having a duty cycle between 0.001 and 0.5.

8. The method of Claim 2 wherein the voltage is switched on and off by a switching assembly comprising an insulated gate bipolar transistor.

9. The method of Claim 2 wherein the applied voltage has a waveform having a frequency of between DC and 100 kHz.

10. The method of Claim 2 wherein a metal hydride is formed on an electrode which dissociates to form hydrogen and/or deuterium atoms.

~~12.~~ 12. The method of Claim 2 wherein the current density generated by the applied voltage is $400,000 \text{ A/m}^2$ or above.

~~13.~~ 13. The method of Claim 2 and further comprising the step of feeding the electrolyte past the electrodes.

~~16.~~ 16. The method of Claim 2 and further comprising the step of generating a magnetic field in the region of the electrodes.

~~19.~~ 19. The method of Claim 16 wherein the magnetic field is arranged to cause the plasma discharge generated adjacent the cathode to be spaced therefrom.

~~20.~~ 20. The method of Claim 2 wherein hydrogen and/or deuterium atoms are formed using a first cathode and the voltage applied to generate the plasma discharge is applied across an anode and a second cathode.

21. The method of Claim 20 wherein the second cathode is downstream from the first cathode.

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22. The method of Claim 2 wherein a cathode electrode comprises tungsten, zirconium, stainless steel, nickel and/or tantalum.

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24. The method of claim 2 wherein the anode electrode is formed of a material which is inert with respect to the electrolyte.

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26. The method of claim 2 wherein the temperature of the plasma is approximately 6000K or above.

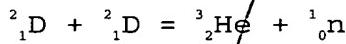
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27. The method of claim 2 comprising the step of varying the ratio of catalyst to water in the electrolyte in the range 1 to 20 mMol.

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28. The method of claim 2 wherein the electrolyte comprises water and/or deuterated water and/or deuterium oxide.

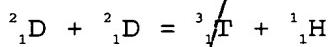
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30. The method of Claim 28 and further comprising the step of varying the ratio of water to deuterium oxide and/or deuterated water in the electrolyte to control energy generation.

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31. The method of claim 2 and further comprising the step of heating the electrolyte to a temperature between 40 to 80°C prior to generating the plasma discharge.

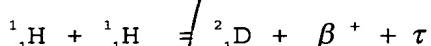
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32. The method of claim 2 wherein fusion occurs via at least one of the following pathways:



or



or



33. Apparatus for carrying out a method of releasing energy comprising an anode, first and second cathodes, a reaction vessel having an inlet and an outlet, means for feeding an electrolyte through the vessel from its inlet to its outlet, the electrolyte having a catalyst therein suitable for initiating transitions of hydrogen and/or deuterium atoms in the electrolyte to a sub-ground energy state, means for applying a voltage across the anode and the first cathode to form hydrogen and/or deuterium atoms, and means for applying a voltage across the anode and second cathode to generate a plasma discharge in the electrolyte, the second cathode being downstream from the first cathode.

The Commissioner is hereby authorized to charge Account No. 13-0017 for any fee deficiency, or credit any overpayment to our Deposit Account No. 13-0017.

Respectfully submitted,
McANDREWS, HELD & MALLOY, LTD.,

Dated: April 18, 2001

By: _____
Lawrence M. Jarvis
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